

REMARKS

In the Office Action of April 1, 2003 in the above-identified application, Claims 6, 7, 9, 11, 12 and 17 - 20 were rejected. Claims 13 - 16 were allowed.

In response, Claims 9, 11 and 17 are amended. Reexamination and reconsideration are respectfully requested in view of the following remarks.

Request for Entry of Amendments

Claims 9, 11 and 17 are amended to clarify that what is meant by a “catenary anchor system” is that the rigid riser is held by tendons that are anchored to the sea bottom. This feature is clearly shown in Figures 1A and 1B. Applicants respectfully submit that this meaning should have been clear from the recitation of a catenary anchor system, but the amendment to Claims 9, 11 and 17 is offered to overcome possible ambiguity in the use of the phrase. Entry of the clarifying amendments to Claims 9, 11 and 17 is therefore respectfully requested.

Rejection of Claims 7, 9, 11, 12, 17, 19 and 20 under 35 U.S.C. §103(a) over Remery

Claims 7, 9, 11, 12, 17, 19 and 20 were rejected under 35 U.S.C. §103(a) over Remery (U.S. Patent No. 4,279,543). The Examiner alleges that Remery discloses a flexible riser part seen as a flexible tube connected to a point below the surface and a rigid riser part seen as pipe connected to the flexible riser part and to the floating support. The Examiner further alleges that the pipe appears to have a length equal to half the water depth. The Examiner further alleges that Remery discloses a catenary anchor system seen as a weight next to the universal joint. The Examiner acknowledges that Remery does not teach a transfer of fluid from a floating support to a point below the water surface, but alleges that it would have been obvious to reverse

the flow of the medium flow. Regarding Claim 12, the Examiner alleges that the Remery discloses a buoyant body to provide addition tension in the tube. Regarding Claims 7 and 19, the Examiner alleged that a holding means in Remery can be viewed as joint fastened to the buoy.

This rejection is respectfully traversed. In particular, it is respectfully submitted that Remery does not disclose a catenary anchor system as required by Claims 9, 11 and 17. To emphasize this point, Claims 9, 11 and 17 are amended to clarify that the catenary anchor system includes at least one tendon that is anchored to the sea bottom, as shown in Figures 1A and 1B. Remery does not teach or suggest that the lower end of the pipe is anchored by a catenary anchor system. Contrary to what is alleged by the Examiner, this limitation is not met by the weight 4 that is provided in Remery at the lower end of its pipe 3. In particular, the weight 4 does not restrict the movement of the lower end of the pipe 3 in a delimited space. The movement of the end of the pipe 3 is only limited by the length of the pipe 6. Further, it is respectfully submitted that it would not have been obvious to modify Remery to add a tethered anchor to the lower end of its pipe 3. The aim of the device of Remery is to avoid that the tube may be bent and/or twisted and be loaded with additional tractive force (Col. 1, lines 22 - 23). The requirement of the present invention that the lower end of the rigid part be anchored to the sea bed is not compatible with this aim, since the anchoring means will create stresses by limiting the moving of the lower end of the rigid part. Therefore, a person skilled in the art would be dissuaded from modifying the device of Remery by anchoring the lower part of the pipe. Accordingly, independent Claims 9, 11 and 17 would not have been obvious over Remery.

Accordingly, it is respectfully submitted that Claims 7, 9, 11, 12, 17, 19 and 20 would not have been obvious over Remery.

Rejection of Claims 6 and 18 under 35 U.S.C. §103(a) over Remery and further in view of Willis

Claims 6 and 18 were rejected under 35 U.S.C. §103(a) over Remery and further in view of Willis (EPO 0467635). The Examiner alleges that Remery discloses the limitations of the claimed invention except for heat insulation means placed on at least the rigid part and/or flexible part. The Examiner alleges that Willis teaches thermally insulating compositions and a method of insulating pipeline bundles and pipeline riser caissons. The Examiner alleges that it would have been obvious to modify the rigid or flexible part of Remery to have heat insulation.

This rejection is respectfully traversed. As discussed above, Remery does not disclose or suggest a catenary anchor system as defined by the present claims. Willis does not supply this missing feature. Accordingly, it is respectfully submitted that Claims 6 and 18 would not have been obvious over Remery alone, or in combination with Willis.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that Claims 6, 7, 9, 11, 12 and 17 - 20 are allowable, along with allowed Claims 13 - 16. Favorable reconsideration is respectfully requested.

Should the Examiner believe that anything further is necessary to place this application in condition for allowance, the Examiner is requested to contact applicants' undersigned attorney at the telephone number listed below.

Kindly charge any additional fees due, or credit overpayment of fees, to Deposit
Account No. 01-2135 (Case No. 612.37981CX1).

Respectfully submitted,
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Marked up copy to show changes made:

IN THE CLAIMS

9) (five times amended) A pipe for great water depths allowing transfer of a fluid between a floating support and a point located below and at a distance from the water surface, characterized in that it comprises:

a continuously flexible riser part connected, at one end, to the point located below the surface, and

a rigid riser part connected to the flexible riser part at one end and to the floating support at the second end thereof,

said rigid riser part having a length at least equal to half the water depth, and

further including a catenary anchor system applied to the rigid riser part in the vicinity of the junction or a connector between the flexible riser part and the rigid riser part, the catenary anchor system comprising one or more tendons anchored to a sea bottom,

wherein the pipe is an injection pipe or line and characterized in that the rigid riser part is connected to a source of fluid to be injected and the flexible riser part is connected to a point where the fluid is to be injected.

11) (four times amended) A system for producing petroleum effluents in great water depths allowing fluid transfer between a floating support and a source of effluents, characterized in that the system comprises at least one or more risers and/or one or more injection lines, and wherein each of the one or more risers and/or one or more injection lines is a pipe for great water depths (D) allowing transfer of a fluid between a floating support (1) and a point located below and at a distance from the water surface, characterized in that it comprises:

a continuously flexible riser part (7) connected, at one end, to the point located below the surface, and

a rigid riser part (6) connected to the flexible riser part at one end and to the floating support at the second end thereof,

said rigid riser part (6) having a length at least equal to half the water depth,

further comprising a catenary anchor system (10) applied to the rigid riser part in the vicinity of the junction and/or of connector (8) between flexible riser part (7) and rigid riser part (6) and anchored to a sea bottom.

17) (amended) A pipe for great water depths allowing transfer of a fluid between a floating support and a point located below and at a distance from the water surface, characterized in that it comprises:

at least one flexible riser part connected, at one end, to the point located below the surface, and

at least one rigid riser part connected to the flexible riser part at one end and to the floating support at the second end thereof, said rigid riser part having a length at least equal to half the water depth, and

a catenary anchor system applied to the rigid riser part in the vicinity of the junction or a connector between the flexible riser part and the rigid riser part, the catenary anchor system comprising one or more tendons anchored to a sea bottom.